17. (a) Enumerate the consequences of competition reaction between substitution and elimination reactions. (5)

(b) Discuss the mechanism of Cope eliminations with suitable examples (5)

18. (a) Describe the oxidizing methods involving DMSO as oxidising agent. (5)

(b) Highlight synthetic utility of alkali metal hydrides. (5)

19. (a) Differentiate short and long-lived free radicals with suitable examples (5)

(b) Discuss about aromatic radical substitution reactions (5)

20. Discuss the aromaticity of [10] – annulence, [14] – annulene and [18] – annulene.

APRIL/MAY 2023

GCH21/DCH21 — ORGANIC CHEMISTRY - II

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Give an example for syn-addition.

2. What is meant by 1,3-conjugate addition?

3. Differentiate E1CB mechanism from E1 mechanism.

4. Show the mechanism of Chugaev elimination.

5. Mention any two-name reactions involving DMSO as oxidising agent.

6. How does ozonolysis help to identify the nature of a double bond?

7. Write Pschorr reaction.

8. How to generate diazo compounds? Write the reaction.

9. Give two examples for non-benzenoid aromatic compounds.

10. Why do cyclobutadiene undergo addition reaction?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Analyze the synthetic importance of electrophilic addition reactions with suitable examples.

Or

(b) Summarise the methods of generating carbenes and its insertion reaction with alkenes.

12. (a) Compare E1 and E2 mechanism with appropriate examples.

Or

(b) Describe the role of Hofmann and Saytzeff rules in eliminations.

13. (a) Explain the oxidation reactions of allylic and aryl methane compounds.

Or

(b) Analyse the synthetic importance of selectrides with suitable examples

14. (a) Explain the following reactions with plausible mechanism and example (i) Sandmeyer reaction, (ii) Hundieker reaction

Or

(b) How free radicals are generated? How is ESR used detecting the free radicals?

15. (a) Differentiate aromatic, anti and non-aromatic character in non-benzenoid compounds.

Or

(b) Explain Huckel rule of aromaticity with examples.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. (a) Outline the importance of neighbouring group participation in substitution reactions. (5)

(b) Explain with suitable example and mechanism (i) Wittig - Horner reaction, (ii) Mannich reaction (5)